

Claims

1. A computer network, comprising:
- 5 a plurality of interconnected nodes, each one of said plurality of nodes having a corresponding data terminal equipment (DTE) device coupled thereto, wherein at least one of said corresponding DTE devices comprises:
- a computing system located at a first location;
 - a human interface remotely located remotely from said first location, said
 - 10 human interface comprising a display device and an input/output ("I/O") device;
 - a first interface device operable to couple to said computing system;
 - a second interface device operable to couple to said display device and said I/O device of said human interface; and
 - at least one transmission line operable to couple said first and second
 - 15 interface devices;
- wherein said first interface device is operable to receive from said computing system a video signal to be transmitted to said display device and a non-video signal to be transmitted to said I/O device, and to convert each of said video signal and said non-video signal into a format suitable for transmission to said second interface
- 20 device;
- wherein said first interface device is operable to transmit said converted video signal and said converted non-video signal to said second interface device via said at least one transmission line; and
- wherein said second interface device is operable to receive said converted
- 25 video signal and said converted non-video signal from said first interface device and to provide said video signal and said non-video signal to said display device and said I/O device, respectively.

2. The computer network according to claim 1,
wherein the computing system is operable to generate the video signal and the non-video signal in a first format suitable for transmission to the human interface; and

wherein the first interface device is operable to receive the video signal and non-
5 video signal in the first format and convert each of the video signal and the non-video signal into a second format suitable for transmission to said second interface device.

3. The computer network according to claim 2,
wherein the second format is suitable for transmission over distances greater than
10 10 feet.

4. The computer network according to claim 2,
wherein the second interface device is operable to receive the video signal and non-video signal in the second format and convert the video signal and non-video signal
15 back to the first format suitable for transmission to the human interface.

5. The computer network according to claim 1,
wherein the first interface device is operable to convert the video signal into a first format suitable for transmission to said second interface device; and
20 wherein the first interface device is operable to convert the non-video signal into a second different format suitable for transmission to said second interface device.

6. The computer network according to claim 1,
wherein said first interface device is operable to encode each of said video signal
25 and said non-video signal into a format suitable for transmission to said second interface device; and

wherein said second interface device is operable to decode said encoded video signal and said encoded non-video signal to reproduce said video signal and said non-

video signal, wherein said video signal and said non-video signal are provided to said display device and said I/O device, respectively.

7. The computer network according to claim 1,

5 wherein said first interface device is operable to encode said video signal into an encoded video signal having a format suitable for transmission to said second interface device;

wherein said first interface device is operable to encode said non-video signal into an encoded non-video signal having a format suitable for transmission to said second
10 interface device;

wherein said second interface device is operable to decode said encoded video signal to reproduce said video signal; and

wherein said second interface device is operable to decode said encoded non-video signal to reproduce said non-video signal.

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8. The computer network according to claim 1,

wherein said at least one transmission line comprises a first transmission line and a second transmission line;

wherein said converted video signal is transmitted to said second interface device
20 via said first transmission line; and

wherein said converted non-video signal is transmitted to said second interface device via said second transmission line.

9. The computer network according to claim 1,

25 wherein said first interface device is operable to combine said video signal and said non-video signal into a combined video/non-video signal having a format suitable for transmission to said second interface device;

wherein said combined video/non-video signal is transmitted to said second interface device via said at least one transmission line; and

wherein said second interface device is operable to receive said combined video/non-video signal from said first interface device and separate said video signal and said non-video signal therefrom for respective propagation to said display device and said I/O device.

10. The computer network according to claim 1,

wherein said first interface device includes an encoding circuit for encoding the video signal and the non-video signal into an encoded format suitable for transmission to said second interface device; and

wherein said second interface device includes a decoding circuit for receiving the video signal and the non-video signal in the encoded format and decoding the video signal and the non-video signal.

11. The computer network according to claim 10,

wherein said encoding circuit is operable to combine said video signal and said non-video signal into a combined video/non-video signal having a format suitable for transmission to said second interface device; and

wherein said decoding circuit is operable to receive said combined video/non-video signal from said first interface device and separate said video signal and said non-video signal therefrom for respective propagation to said display device and said I/O device.

12. The computer network according to claim 1, wherein said at least one transmission line coupling said first and second interface devices is a 4-wire cable.

13. The computer network according to claim 1, further comprising at least one cable for interconnecting said plurality of nodes.

14. The computer network according to claim 1, wherein said computing
5 system further comprises a computer chassis and at least one computing system component housed in said computer chassis and coupled to said first interface device.

15. The computer network according to claim 1, wherein said I/O device of said human interface further comprises either a printer, a keyboard, or a mouse.

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16. The computer network according to claim 1, wherein the human interface is located more than 10 feet from the computing system.

17. The computer network according to claim 1,
15 wherein said second interface is operable to receive from said I/O device a second non-video signal to be transmitted to said computing system, and is operable to convert said second non-video signal into a format suitable for transmission to said first interface device;

20 wherein said converted second non-video signal is transmitted to said first interface device via said at least one transmission line; and

wherein said first interface device is operable to receive said converted second non-video signal from said second interface device and provide said second non-video signal to the computing system.

25 18. The computer network according to claim 17,
wherein the I/O device is operable to generate the second non-video signal in a first format suitable for transmission to the computing system; and

wherein the second interface device is operable to convert the second non-video signal into a second format suitable for transmission to said first interface device.

19. The computer network according to claim 18,
5 wherein the second format is suitable for transmission over distances greater than 10 feet.

20. The computer network according to claim 18,
wherein the first interface device is operable to receive the second non-video
10 signal in the second format and convert the second non-video signal back to the first format suitable for transmission to the computing system.

21. The computer network according to claim 1, wherein at least two of said plurality of nodes are positioned at a common location, wherein said at least one
15 corresponding DTE device comprises at least two DTE devices corresponding to each of said at least two nodes, wherein said at least two DTE devices comprise at least two commonly located computing systems with corresponding at least two human interfaces, wherein said at least two human interfaces are each located remotely from said at least two commonly located computing systems.

22. The computer network according to claim 21, wherein said computing systems respectively coupled to each one of said at least two nodes are housed together in a shared computer room.

23. The computer network according to claim 21, wherein said computing
25 systems respectively coupled to each one of said at least two nodes are housed together in a common support structure located in a shared computer room.

24. The computer network according to claim 23, wherein said common support structure is a computer rack.

25. The computer network according to claim 21, wherein said at least two
5 human interfaces are remotely located from each other.

26. A computer network, comprising:
a plurality of interconnected nodes, each one of said nodes having a DTE device
coupled thereto and wherein said DTE device coupled to a first one of said nodes
10 comprises:

a computing system located at a first location;
a human interface located at a second location, said second location
remotely located relative to said first location;
a first interface device coupled to said computing system;
15 a second interface device coupled to said human interface; and
at least one transmission line coupling said first and second interface
devices;

wherein said first interface device is operable to receive human interface
signals generated by said computing system and convert the human interface signals into
20 a format suitable for transmission to said second interface device; and

wherein said second interface device is operable to receive said human
interface signals from the first interface device and convert the human interface signals
into a format suitable for transmission to the human interface.

27. The computer network according to claim 26,
25 wherein the computing system is operable to generate the human interface signals
in a first format; and

wherein said second interface device is operable to receive said human interface signals from the first interface device and convert the human interface signals back into the first format for transmission to the human interface.

5 28. The computer network according to claim 26,
 wherein the computing system is operable to generate the human interface signals in a first format suitable for transmission to the human interface; and
 wherein the first interface device is operable to convert the human interface signals into a second format suitable for transmission to said second interface device.

10 29. The computer network according to claim 28,
 wherein the second format is suitable for transmission over distances greater than 10 feet.

15 30. The computer network according to claim 28,
 wherein the second interface device is operable to receive the human interface signals in the second format and convert the human interface signals in the second format back to the first format suitable for transmission to the human interface.

20 31. The computer network according to claim 26,
 wherein said first interface device is operable to encode said human interface signals into a format suitable for transmission to said second interface device; and
 wherein said second interface device is operable to decode said encoded human interface signals to reproduce said human interface signals, wherein said human interface
25 signals are provided to said human interface.

 32. The computer network according to claim 26,
 wherein the human interface comprises a plurality of human interface devices; and

wherein the human interface signals comprise a plurality of human interface signals corresponding to the plurality of human interface devices.

33. The computer network according to claim 32,
5 wherein said first interface device is operable to receive the plurality of human interface signals generated by said computing system and convert the plurality of human interface signals into a format suitable for transmission to said second interface device; and

wherein said second interface device is operable to receive said plurality of human
10 interface signals from the first interface device and convert the plurality of human interface signals into a format suitable for transmission to the human interface.

34. The computer network according to claim 33,
wherein the computing system is operable to generate the plurality of human
15 interface signals in a first format suitable for transmission to the human interface; and
wherein the first interface device is operable to convert each of the plurality of human interface signals into a second format suitable for transmission to said second interface device.

20 35. The computer network according to claim 34,
wherein the second format is suitable for transmission over distances greater than 10 feet.

36. The computer network according to claim 34,
25 wherein the second interface device is operable to receive the plurality of human interface signals in the second format and convert each of the plurality of human interface signals in the second format back to the first format suitable for transmission to the human interface.

37. The computer network according to claim 32,
wherein the plurality of human interface signals includes a first human interface
signal and a second human interface signal;

5 wherein the first interface device is operable to convert the first human interface
signal into a first format suitable for transmission to said second interface device; and

wherein the first interface device is operable to convert the second human
interface signal into a second different format suitable for transmission to said second
interface device.

10 38. The computer network according to claim 32,
wherein the plurality of human interface signals includes a first human interface
signal and a second human interface signal;

wherein said at least one transmission line comprises a first transmission line and
15 a second transmission line;

wherein said first human interface signal is transmitted to said second interface
device via said first transmission line; and

wherein said second human interface signal is transmitted to said second interface
device via said second transmission line.

20 39. The computer network according to claim 32,
wherein said first interface device is operable to combine said plurality of human
interface signals into a combined signal having a format suitable for transmission to said
second interface device;

25 wherein said combined signal is transmitted to said second interface device via
said at least one transmission line; and

wherein said second interface device is operable to receive said combined signal from said first interface device and separate said plurality of human interface signals for respective propagation to said plurality of human interface devices.

5 40. The computer network according to claim 26,
 wherein the computing system generates a plurality of human interface signals corresponding to a plurality of human interface devices;

 wherein said first interface device is operable to receive each of said plurality of human interface signals generated by said computing system and convert each of said
10 plurality of human interface signals into a format suitable for transmission to said second interface device; and

 wherein said second interface device is operable to receive each of said plurality of converted human interface signals from the first interface device and convert each of the plurality of converted human interface signals into a format suitable for transmission
15 to the human interface.

 41. The computer network according to claim 40,
 wherein said first interface device is operable to combine said plurality of human interface signals into a combined signal having a format suitable for transmission to said
20 second interface device;

 wherein said combined signal is transmitted to said second interface device via said at least one transmission line; and

 wherein said second interface device is operable to receive said combined signal from said first interface device and separate said plurality of human interface signals for
25 respective propagation to said plurality of human interface devices.

 42. The computer network according to claim 41,

wherein said human interface comprises a display device and at least one input/output ("I/O") device;

wherein the second interface device is coupled to the display device and the at least one I/O device of said human interface; and

5 wherein the plurality of human interface signals include a video signal intended for the display device and at least one I/O signal intended for the I/O device.

43. The computer network according to claim 26,
wherein said human interface comprises a display device and an input/output
10 ("I/O") device;

wherein the second interface device is coupled to the display device and the I/O device of said human interface; and

wherein the human interface signals include a video signal intended for the display device and an I/O signal intended for the I/O device.

15 44. The computer network according to claim 43, wherein said I/O device of said human interface comprises either a keyboard or a mouse.

45. The computer network according to claim 43,
20 wherein said first interface device is operable to combine said video signal and said I/O signal into a combined video / I/O signal having a format suitable for transmission to said second interface device;

wherein said combined video / I/O signal is transmitted to said second interface device via said at least one transmission line; and

25 wherein said second interface device is operable to receive said combined video / I/O signal from said first interface device and separate said video signal and said I/O signal therefrom for respective propagation to said display device and said I/O device.

46. The computer network according to claim 26,
wherein said human interface comprises a display device and a plurality of
input/output ("I/O") devices;

wherein the second interface device is coupled to the display device and the
5 plurality of I/O devices of said human interface; and

wherein the human interface signals include a video signal intended for the
display device and a plurality of I/O signals intended for the plurality of I/O devices.

47. The computer network according to claim 26, wherein said at least one
10 transmission line coupling said first and second interface devices is a 4-wire cable.

48. The computer network according to claim 26, wherein the human interface
is located more than 10 feet from the computing system.

49. The computer network according to claim 26,
15 wherein the human interface includes a human interface device;
wherein said second interface is operable to receive, from the human interface
device, second human interface signals to be transmitted to said computing system, and is
operable to convert said second human interface signals into a format suitable for
20 transmission to said first interface device;

wherein said converted second human interface signals are transmitted to said first
interface device via said at least one transmission line; and

wherein said first interface device is operable to receive said converted second
human interface signals from said second interface device and provide said second human
25 interface signals to the computing system.

50. The computer network according to claim 49,

wherein the human interface device is operable to generate the second human interface signals in a first format suitable for transmission to the computing system; and

wherein the second interface device is operable to convert the second human interface signals into a second format suitable for transmission to said first interface device.

51. The computer network according to claim 50,
wherein the second format is suitable for transmission over distances greater than 10 feet.

52. The computer network according to claim 50,
wherein the first interface device is operable to receive the second human interface signals in the second format and convert the second human interface signals back to the first format suitable for transmission to the computing system.

53. The computer network according to claim 26, wherein at least two of said nodes are positioned at a common location, and wherein said computer network includes a plurality of commonly located computing systems.

54. The computer network according to claim 53, wherein said computing systems respectively coupled to each one of said at least two nodes are housed together in a common support structure located in a shared computer room.

55. A computer network, comprising:
a plurality of interconnected nodes, each one of said nodes having a DTE device coupled thereto and wherein said DTE device coupled to a first one of said nodes comprises:

a computing system located at a first location;

a human interface located at a second location, said second location remotely located relative to said first location, said human interface comprising a display device and an input/output ("I/O") device;

a first interface device coupled to said computing system;

5 a second interface device coupled to said display device and said I/O device of said human interface; and

a transmission line coupling said first and second interface devices;

wherein said first interface device is operable to convert signals generated by said computing system into a format suitable for transmission to said second interface
10 device, and wherein said second interface device is operable to convert signals received from said first interface device into a format suitable for transmission to said human interface.

56. A computer network, comprising:

15 a plurality of interconnected nodes, each one of said nodes having a DTE device coupled thereto and wherein said DTE device coupled to a first one of said nodes comprises:

a computing system located at a first location;

20 a human interface located at a second location, said second location remotely located relative to said first location, said human interface comprising a display device and an input/output ("I/O") device;

a first interface device coupled to said computing system;

a second interface device coupled to said display device and said I/O device of said human interface; and

25 at least one transmission line coupling said first and second interface devices;

wherein said first interface device is operable to receive, from said computing system, a video signal to be transmitted to said display device, and to convert said video signal into a format suitable for transmission to said second interface device;

wherein said converted video signal is transmitted to said second interface
5 device via said at least one transmission line; and

wherein said second interface device is operable to receive said converted video signal from said first interface device and provide said video signal to said display device.

10 57. The computer network according to claim 56,
wherein the computing system is operable to generate the video signal in a first format suitable for transmission to the human interface; and

wherein the first interface device is operable to convert the video signal into a second format suitable for transmission to said second interface device.

15 58. The computer network according to claim 57,
wherein the second format is suitable for transmission over distances greater than 10 feet.

20 59. The computer network according to claim 57,
wherein the second interface device is operable to receive the video signal in the second format and convert the video signal back to the first format suitable for transmission to the human interface.

25 60. The computer network according to claim 56,
wherein said second interface device is operable to receive, from said I/O device, a non-video signal to be transmitted to said computing system, and to convert said non-video signal into a format suitable for transmission to said first interface device;

wherein said converted non-video signal is transmitted to said first interface device via said at least one transmission line; and

wherein said first interface device is operable to receive said converted non-video signal from said second interface device and provide said non-video signal to the
5 computing system.

61. The computer network according to claim 60,

wherein the I/O device is operable to generate the non-video signal in a first format suitable for transmission to the computing system; and

10 wherein the second interface device is operable to convert the non-video signal into a second format suitable for transmission to said first interface device.

62. The computer network according to claim 61,

15 wherein the second format is suitable for transmission over distances greater than 10 feet.

63. The computer network according to claim 61,

20 wherein the first interface device is operable to receive the non-video signal in the second format and convert the non-video signal back to the first format suitable for transmission to the computing system.

64. The computer network according to claim 60,

25 wherein said first interface device is operable to receive, from said computing system, a non-video signal to be transmitted to said I/O device, and to convert said non-video signal into a format suitable for transmission to said second interface device;

wherein said converted non-video signal is transmitted to said second interface device via said at least one transmission line; and

wherein said second interface device is operable to receive said converted non-video signal from said first interface device and provide said non-video signal to said I/O device.

5 65. The computer network according to claim 56,
 wherein said first interface device is operable to receive, from said computing system, a non-video signal to be transmitted to said I/O device, and to convert said non-video signal into a format suitable for transmission to said second interface device;
 wherein said converted non-video signal is transmitted to said second interface
10 device via said at least one transmission line; and
 wherein said second interface device is operable to receive said converted non-video signal from said first interface device and provide said non-video signal to said I/O device.

15 66. A computer network, comprising:
 a plurality of interconnected nodes, each one of said nodes having a DTE device coupled thereto and wherein said DTE device coupled to a first one of said nodes comprises:
 a computing system located at a first location;
20 a human interface located at a second location, said second location remotely located relative to said first location;
 a first interface device coupled to said computing system;
 a second interface device coupled to said human interface; and
 a transmission line coupling said first and second interface devices;
25 wherein said second interface device is operable to receive human interface signals generated by said human interface and convert the human interface signals into a format suitable for transmission to said first interface device; and

wherein said first interface device is operable to receive said converted human interface signals from the second interface device and convert the converted human interface signals into a format suitable for transmission to the computing system.

5 67. The computer network according to claim 66,
 wherein said first interface device is operable to receive said converted human interface signals from the second interface device and convert the converted human interface signals into the human interface signals for transmission to the computing system.

10 68. The computer network according to claim 66,
 wherein the human interface is operable to generate the human interface signals in a first format suitable for transmission to the computing system; and
 wherein the second interface device is operable to convert the human interface
15 signals into a second format suitable for transmission to said first interface device.

 69. The computer network according to claim 68,
 wherein the second format is suitable for transmission over distances greater than
20 10 feet.

 70. The computer network according to claim 68,
 wherein the first interface device is operable to receive the human interface signals in the second format and convert the human interface signals back to the first format suitable for transmission to the computing system.

25 71. The computer network according to claim 66,

wherein said first interface device is operable to receive human interface signals generated by said computing system and convert the human interface signals into a format suitable for transmission to said second interface device; and

5 wherein said second interface device is operable to receive said converted human interface signals from the first interface device and convert the converted human interface signals into a format suitable for transmission to the human interface.